

IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

- 1(Previously Presented). A method of forming a QAM constellation, comprising:
arranging constellation points in a non-square grid to achieve a large noise margin, and to
allow for fast convergence of blind equalization algorithms, wherein the
constellation is at least one of 8QAM constellation and 13QAM constellation.
- 2(Original). The QAM constellation of claim 1, wherein said points are selected to use
low word widths.
- 3(Previously Presented). A method for improved shell mapping comprising:
providing a non-square grid QAM constellation and employing points of said constellation
in said mapping, wherein the constellation is at least one of 8QAM constellation and 13QAM
constellation..
- 4-12. Canceled.
- 13 (Previously Presented). The method according to claim 1, wherein the 8QAM
constellation points are selected from

$$\{0, 1, e^{2\pi j/7}, e^{4\pi j/7}, e^{6\pi j/7}, e^{8\pi j/7}, e^{10\pi j/7}, e^{12\pi j/7}\}.$$
- 14 (Previously Presented). The method according to claim 1, wherein the 8QAM
constellation points are selected from

$$\{0, 1, e^{2\pi j/6}, e^{4\pi j/6}, e^{6\pi j/6}, e^{8\pi j/6}, e^{10\pi j/6}, 1 + e^{2\pi j/6}\} - (3 + j\sqrt{3})/16.$$
- 15 (Previously Presented). The method according to claim 1, wherein the 13QAM
constellation points are selected from

$$\{0, \pm 1, e^{\pm 2\pi j/6}, e^{\pm 4\pi j/6}, \pm 1 \pm e^{2\pi j/6}, \pm \sqrt{3}\}.$$

16 (Currently Amended). The method according to claim 13 3, wherein the 8QAM constellation points are selected from

$$\{0, 1, e^{2\pi j/7}, e^{4\pi j/7}, e^{6\pi j/7}, e^{8\pi j/7}, e^{10\pi j/7}, e^{12\pi j/7}\}.$$

17 (Currently Amended). The method according to claim 13 3, wherein the 8QAM constellation points are selected from

$$\{0, 1, e^{2\pi j/6}, e^{4\pi j/6}, e^{6\pi j/6}, e^{8\pi j/6}, e^{10\pi j/6}, 1 + e^{2\pi j/6}\} - (3 + j\sqrt{3})/16.$$

18 (Currently Amended). The method according to claim 13 3, wherein the 13QAM constellation points are selected from

$$\{0, \pm 1, e^{\pm 2\pi j/6}, e^{\pm 4\pi j/6}, \pm 1 \pm e^{2\pi j/6}, \pm \sqrt{3}\}.$$

19(Previously Presented). The method according to claim 16, wherein the shell mapping is performed using a mapping table given by $\{-1, 15, 9 \pm 12j, -4 \pm 15j, -15 \pm 7j\}$, wherein the mapping table is implemented using 5 bits words for I and Q axis.

20(Previously Presented). The method according to claim 17, wherein the shell mapping is performed using a mapping table given by $\{0, 1 \pm j, -1 \pm j, 2, -2, 3 \pm j\}$, wherein the mapping table is implemented using 3 bits for I-axis and 2 bits for Q-axis.

21(Previously Presented). The method according to claim 17, wherein the shell mapping is performed using a mapping table given by $\{-8-2j, 8-2j, 4+5j, -4-9j, -4+5j, 4-9j, 12j, -2j\}$, wherein the mapping table is implemented using 5 bits words for I and Q axis.

22(Previously Presented). The method according to claim 17, wherein the shell mapping is performed using a mapping table given by $\{-8-4j, -2-4j, 4-4j, 5+j, 1+j, 7+j, -2+6j, 4+6j\}$, wherein the mapping table is implemented using 4 bits words for I and Q axis.